

FIG. 1

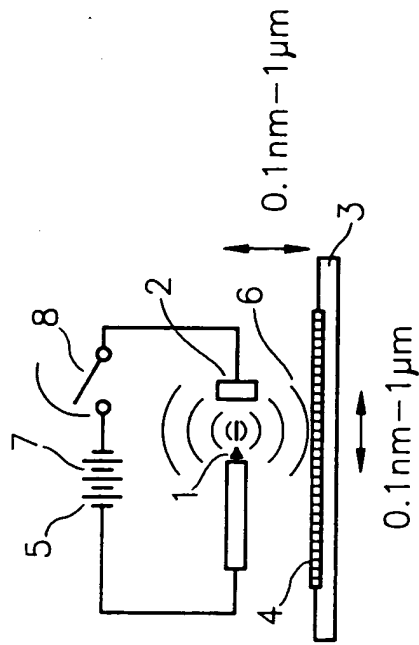


FIG. 2

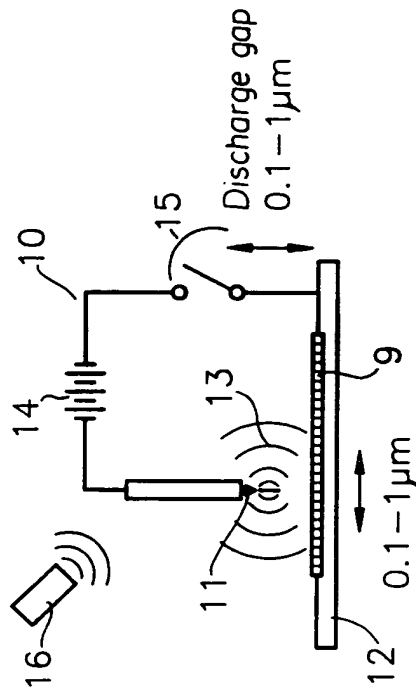


FIG. 6

Liquid	Atomic Number	Melt. point [°K]	Boiling point [°K]	Critical Temp. [°K]	Critical Pressure [Bar]	Heat of Vaporisat. [$10^3 \text{ JK}^{-1} \text{ kg}^{-1}$]	Heat Capacity [$\text{JK}^{-1} \text{ kg}^{-1}$]
H ₂	1	13.8	20.3	33.3	17	310	14200
N ₂	7	63.0	77.4	126.2	34	200	1040
O ₂	8	54.8	90.2	154.6	51	213	920
F ₂	9	55.5	85.4	144.0	57	316	750
Ne	10	24.5	27.0	54.0	27	86	1030
Ar	18	83.8	87.3	150.8	48	158	520
Cl ₂	17	171.6	239.1	417.0	77	282	500
Kr	36	116.6	120	209.4	55	108	—
Xe	54	161.3	165.1	289.7	59	102	—

FIG. 3

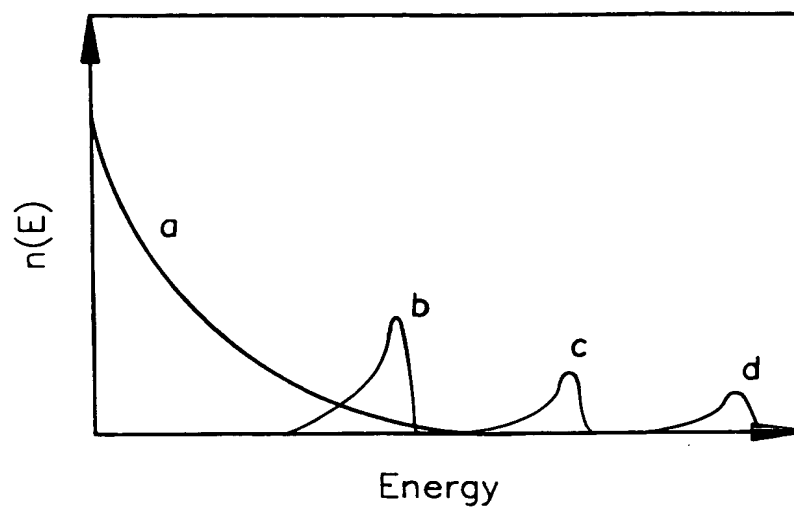


FIG. 4

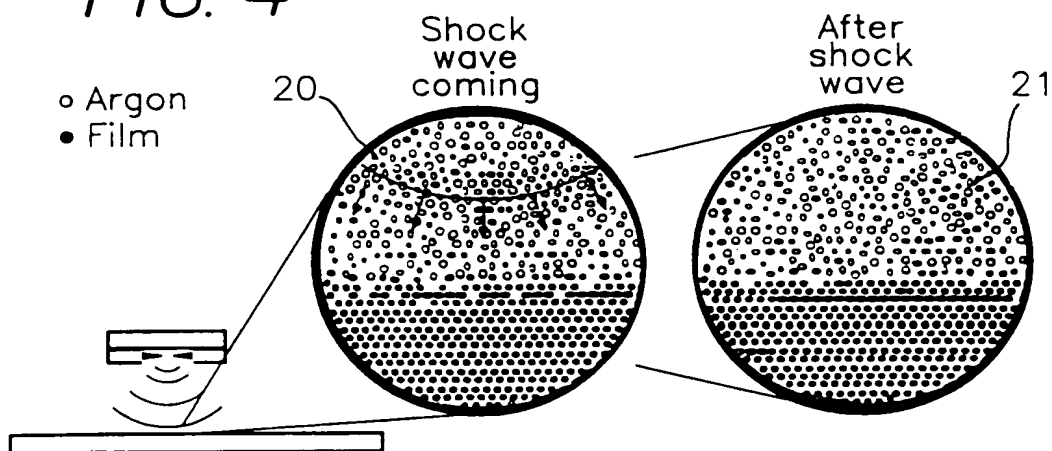


FIG. 5

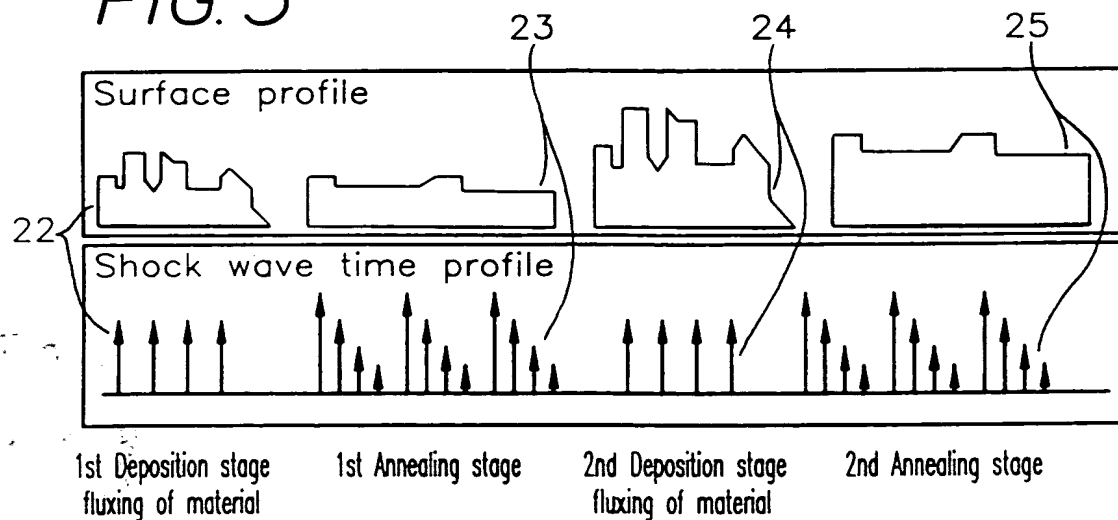


FIG. 7

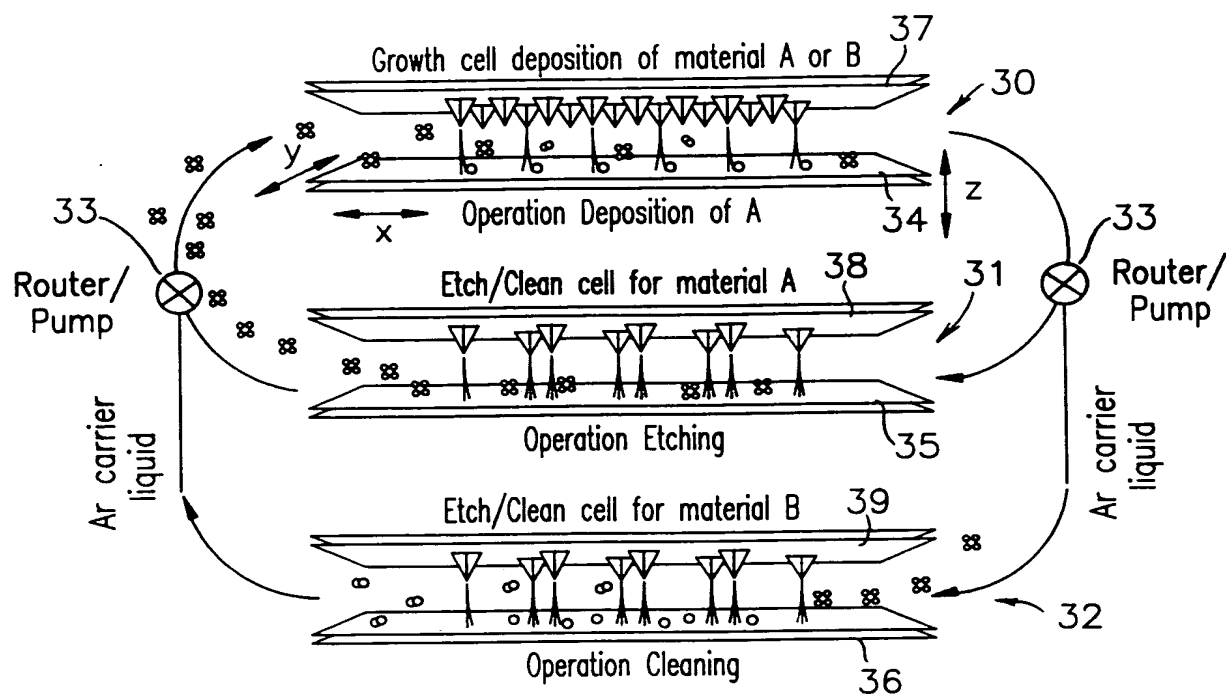


FIG. 10

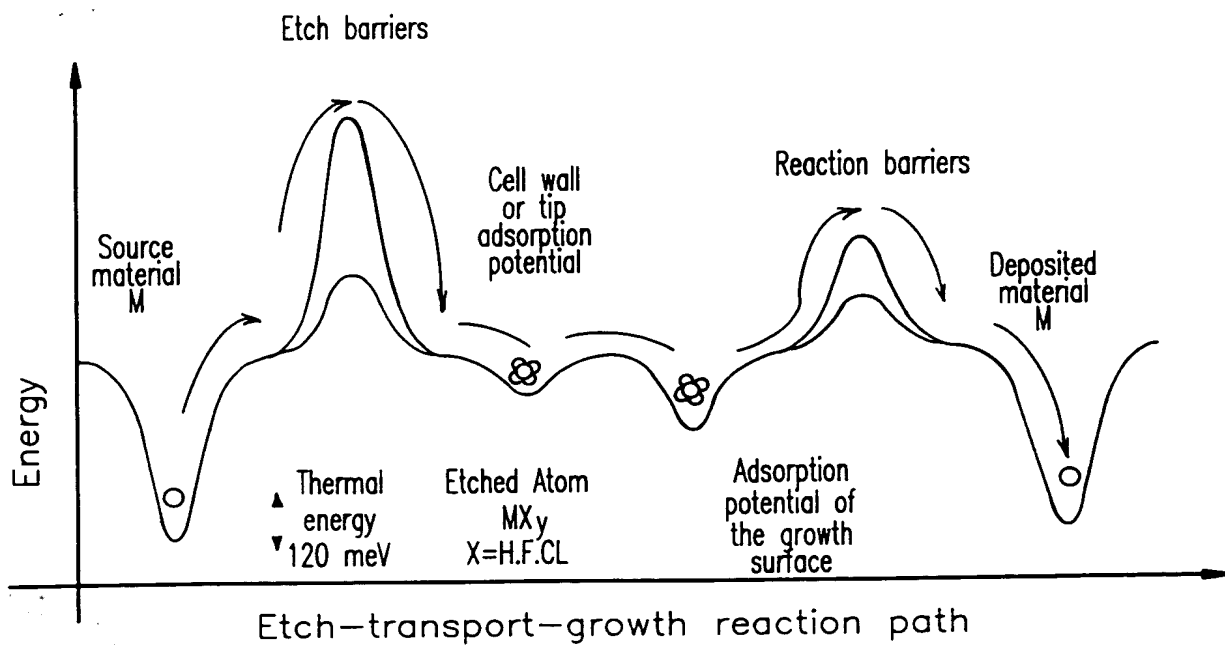
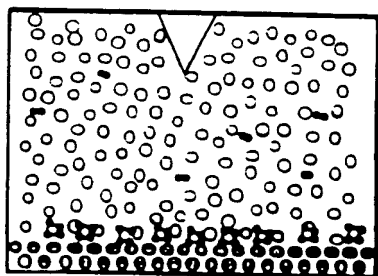
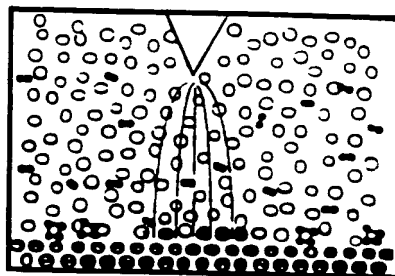


FIG. 8(a)



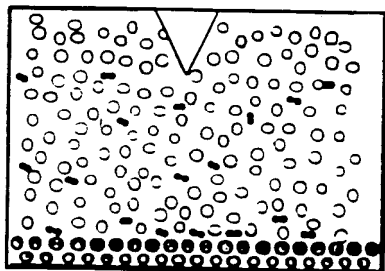
Before nanodischarge
Physisorption of etched resource atom

FIG. 8(b)



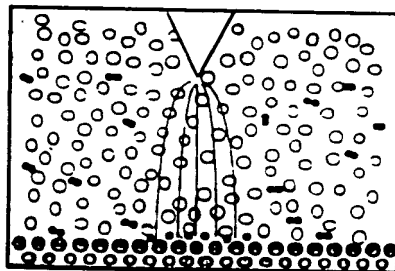
Weak nanodischarge for
electron induced dissociative chemisorption
of etched resource atom or deposition

FIG. 9(a)



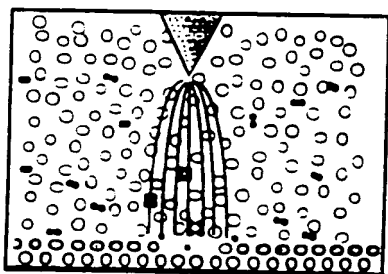
Before nanodischarge
Physisorption of etchant molecules

FIG. 9(b)



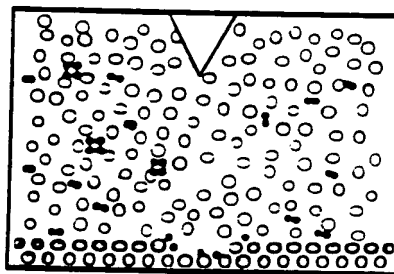
Weak nanodischarge for
electron induced dissociative chemisorption

FIG. 9(c)



Strong nanodischarge
Electron induced chemical etching

FIG. 9(d)



After nanodischarge
re-physisorption of etchant molecules

$T = 80-150^{\circ} \text{K}$ Pressure = 1.0-50 Bar

○ Argon ○ Resource atom ⊗ Etched resource atom
● Etchant molecule

FIG. 11

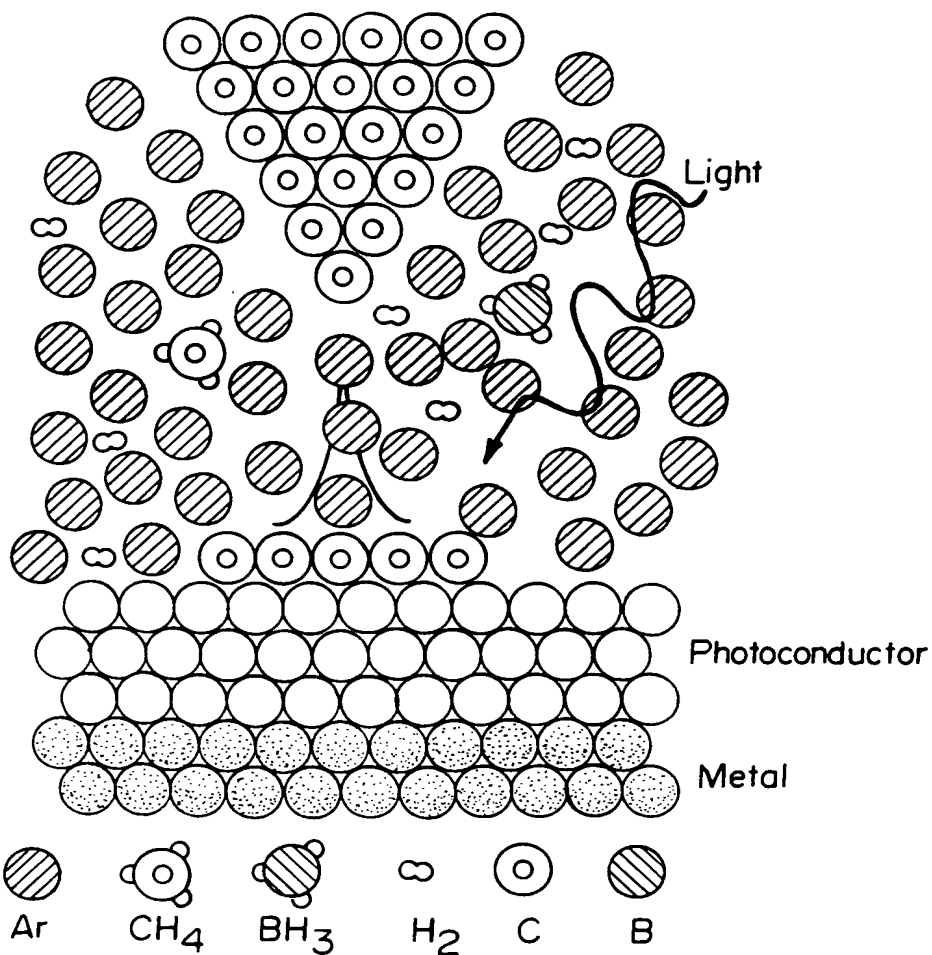
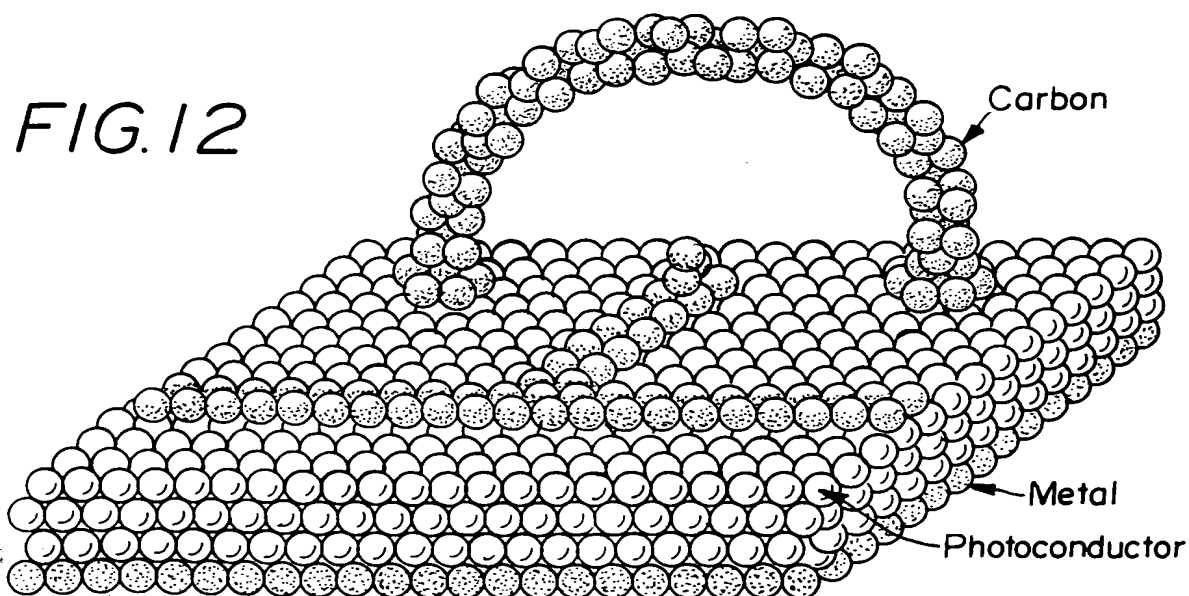


FIG. 12



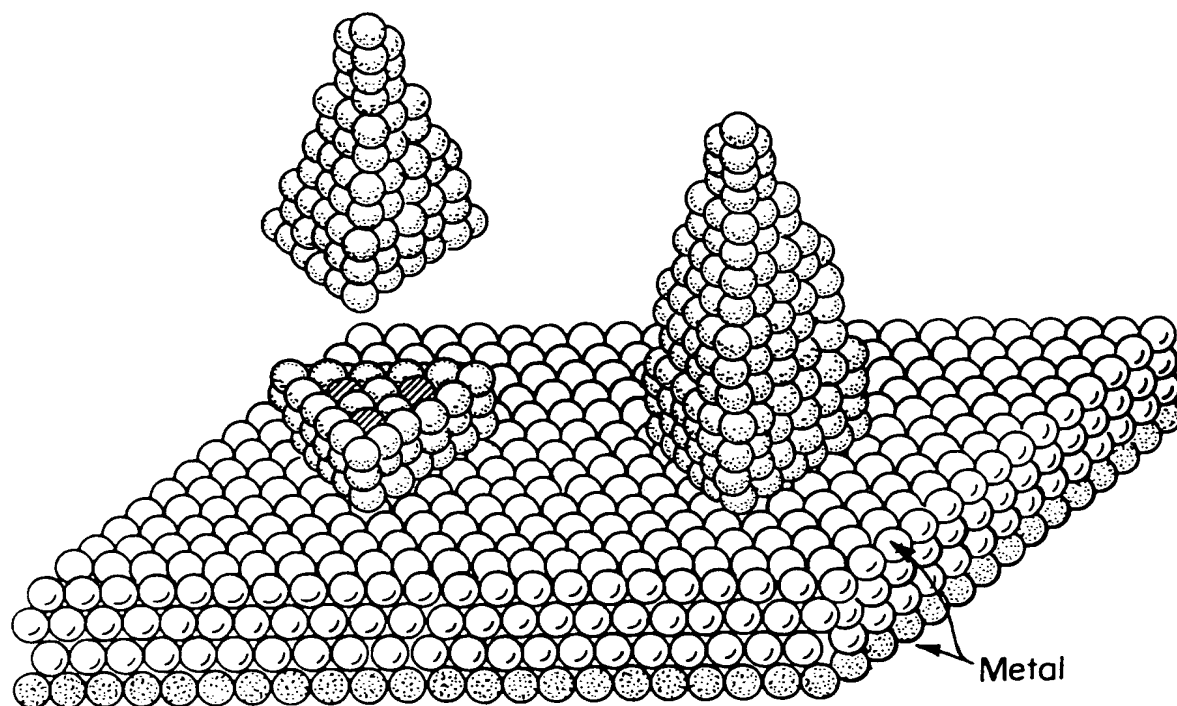


FIG. 13

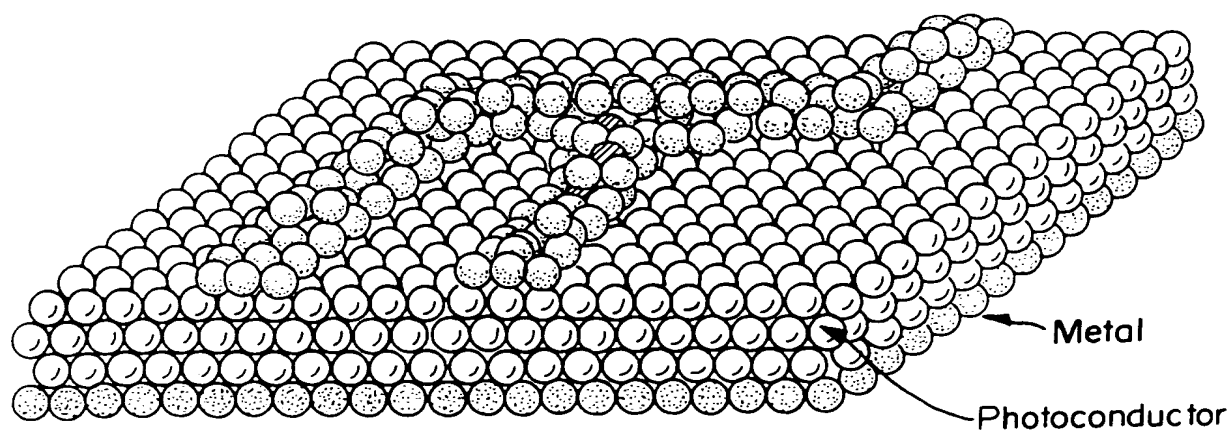


FIG. 14

